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## **Bromide - Owner information sheet**

Seizures are caused by abnormal electrical discharges from nerve cells in the brain. Bromide suppresses seizure activity by reducing the electrical charge within these cells.

### **How much bromide should my dog have?**

Bromide is normally given as a potassium salt and is available in liquid, capsule or tablet form. Potassium bromide should be given with food and is normally given once daily in the evening, or divided into two daily doses.

The starting dose is normally 30-40 milligrams (mg) for every kilogram (kg) body weight daily. For example a 30kg Golden Retriever could receive between 900 and 1200mg per day. In some cases your vet will recommend "loading" your dog with an initial higher dose to help get blood concentrations to active levels more quickly.

Your vet will need to calculate the final dose your dog needs depending on the concentration of bromide in your pet's blood (see below). Every dog gets rid of the drug at a different rate.

There are other factors that may affect the dose of bromide that your dog requires. A high salt diet means the drug will be eliminated more quickly, the converse is also true, and changing your dog's diet may increase or decrease the amount of bromide in their blood.

Therefore, changes to the diet should be made gradually (over at least 5 days) and blood concentrations of bromide should be rechecked every time diet is altered (especially if the dog becomes sedated or has unexpected seizures). Most diets have a similar salt content - with the exception of home cooked diets and prescription diets for heart disease (low salt) or for urinary stones (some are high salt).

Blood concentrations of bromide can also increase if a dog becomes severely dehydrated, e.g. following severe or bloody diarrhoea. If your dog appears more sedated the bromide dose may need to be temporally withdrawn or reduced.

It takes a long time for bromide to be removed from the body so it can be safe to miss a single dose (under veterinary guidance). However in normal circumstances bromide therapy should not cease suddenly otherwise your pet may have withdrawal seizures.

### **Why does my vet need to take blood samples?**

Blood concentrations of bromide should be assessed 8-16 weeks after starting the drug. Ideally blood levels should be measured around 16 weeks after treatment starts as it takes 4 months for blood levels to stabilise after the drug is started. The author aims for a concentration of ~ 1000mg/l (15 mmol/l) - 2000mg/l (25mmol/l). Higher blood concentrations are acceptable if there are no adverse effects e.g. sedation.

Blood concentration of bromide should also be assessed every 6-12 months, 8-16 weeks after a change in dose and if there is a breakdown in control (i.e. unexpected seizures). Some vets like to try to measure the lowest levels of bromide in the blood (usually just before the next dose is due). However these "trough" concentrations are not essential. It is however, good practice to always

- 1) use the same laboratory for testing samples
- 2) obtain the blood samples at the same time after medication
- 3) fast your pet for at least 12 hours before a blood sample is taken. Lipaemia (fat in the blood) can greatly affect bromide results and if excessive the assay cannot be performed.

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If seizures are still not adequately controlled (clusters of >3 seizures or seizures occurring more frequently than every 6 weeks) when the bromide serum concentration is greater than 1500mg/l (20mmol/l) then your vet may want to consider adding or changing to another drug.

### **What side effects can bromide cause?**

#### ***Sedation and poor co-ordination***

This may be seen at the start of therapy, after increases in doses, or with the addition of another drug (especially phenobarbitone). This effect typically wears off within a week. If it doesn't, or is excessive, then your vet may advise reducing the dose of bromide or switching your pet to another drug. If the dog is drowsy shortly after dosing then try giving the medication last thing at night. Splitting the dose i.e. giving twice daily can also reduce sedation in some dogs.

#### ***Increased urination and drinking***

Bromide acts like a diuretic. If your pet is receiving bromide they must always have access to water otherwise they can get dehydrated. Some animals on high doses may wet in the house overnight or when left for extended periods.

#### ***Increased appetite***

Your pet is likely to have an increased appetite when they are on bromide therapy, however this does not mean they require more food. Weight gain can be a difficult problem to avoid especially if your dog is already on phenobarbitone. It may help to feed a lower calorie food so that your pet can eat more without gaining weight. Extending mealtimes for example using a Bustercube™ (<http://www.bustercube.com>) may also be useful.

#### ***Gastrointestinal disease (vomiting and diarrhoea)***

Also see "pancreatitis" below. Potassium bromide is a gastrointestinal irritant and should be mixed with food. Some dogs are unable to tolerate it – although in this instance it is worth trying a different formulation e.g. liquid instead of tablets.

#### ***Pancreatitis***

Epileptic dogs are at greater risk of pancreatitis – i.e. inflammation of the pancreas. Pancreatitis may result in clinical signs such as vomiting and anorexia and in severe cases can be life-threatening. It is likely there are multiple risk factors for this disease including obesity, persistently high resting triglyceride, a high fat diet, a tendency to scavenge and high doses of phenobarbitone combined with bromide.

#### ***Skin disease***

In humans bromide may cause skin changes - so called 'bromism' - and this is one of the reasons this drug is not used for people. It does not appear that this syndrome occurs in dogs, however dogs with pre-existing skin disease e.g. atopy may be itchier when receiving bromide and in some cases it may not be advisable to use this drug.

#### ***Liver function***

Bromide does not require liver metabolism and is one of the few "liver safe" anti-epileptic drugs.

#### ***Kidney function***

Kidney function may also affect bromide elimination. This is only a problem if the pet develops acute kidney failure. In this situation the kidneys shut down and the bromide concentration rises and literally anaesthetises the pet. In this circumstance your vet will give your dog fluids and diuretics to flush the bromide out of circulation. Bromide does not damage the kidneys.

#### ***Cats and bromide***

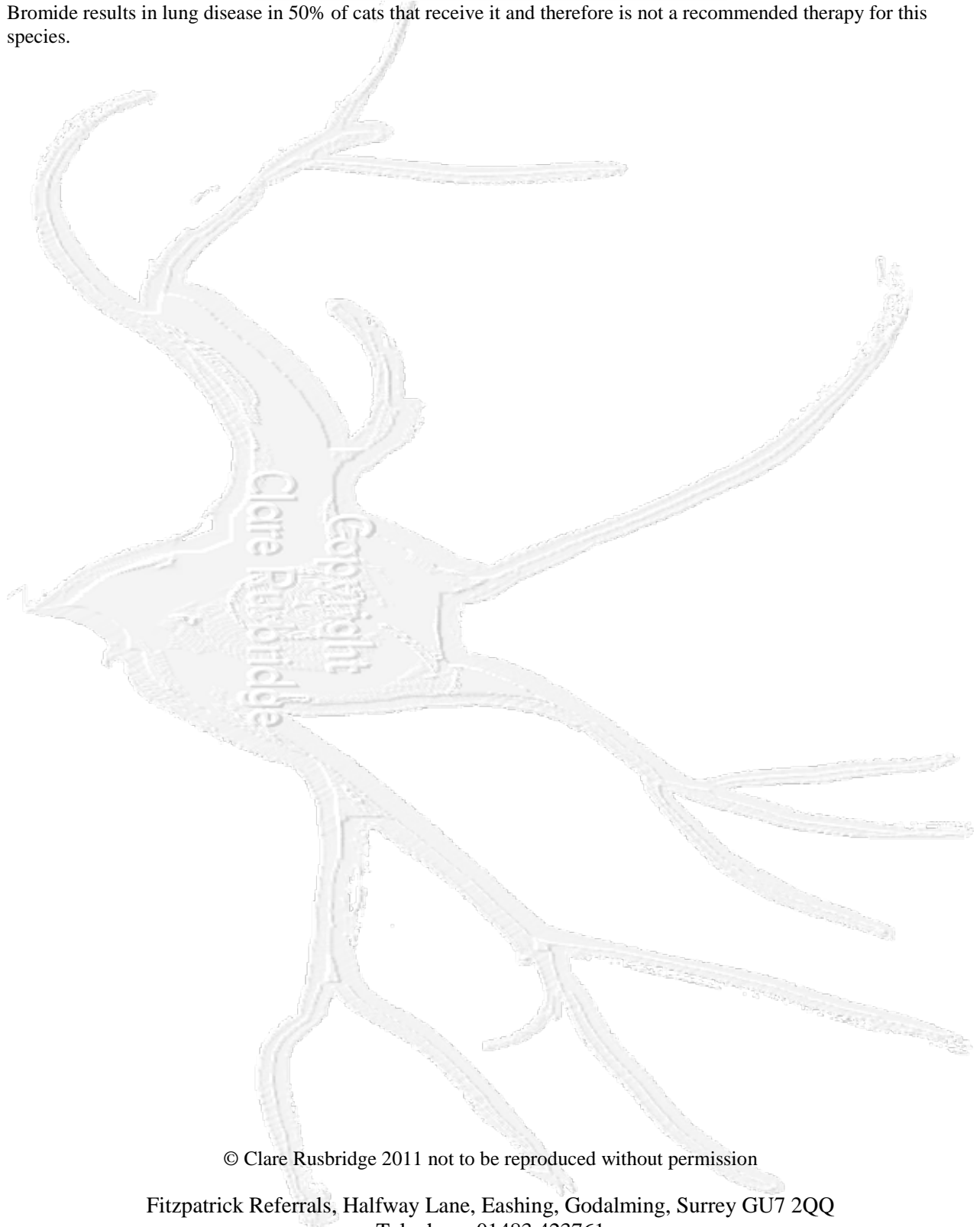
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Bromide results in lung disease in 50% of cats that receive it and therefore is not a recommended therapy for this species.



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